

# HOME & GARDEN INFORMATION CENTER

## Hydrangea

*Hydrangea macrophylla*, also called bigleaf or French hydrangea, has either pink or blue flowers. Flower color is determined indirectly by the soil pH, which affects the availability of aluminum in the soil. In acid soils the flowers will be blue, in alkaline soils the flowers will be pink. Aluminum is available to the plant in acid soils. Research has determined that the actual mechanism of color variation is due to the presence or absence of aluminum compounds in the flowers.



Blue flower color of bigleaf hydrangea occurs in acidic soil.  
Joey Williamson, ©2008 HGIC, Clemson Extension

For blue flowers, maintain a soil pH between 5 and 5.5. Apply aluminum sulfate or sulfur to reduce the pH to this range when you see new growth emerging in April. For application rates refer to the tables in fact sheet [HGIC 1650, \*Changing the pH of Your Soil\*](#). Information on soil testing is available in fact sheet [HGIC 1652, \*Soil Testing\*](#).

For pink flowers, maintain a soil pH of 6 or more by liming your soil. For more information on selecting a liming material and time of application refer to fact sheet [HGIC 1650, \*Changing the pH of Your Soil\*](#).

### Mature Height/Spread

Hydrangeas are deciduous shrubs that grow from 4 to 12 feet in height depending on the variety.



Growth habit of bigleaf hydrangea  
Joey Williamson, ©2008 HGIC, Clemson Extension

### Growth Rate

The growth rate is quite fast.

### Landscape Use

Bigleaf hydrangeas are effective as single plants, massed or in containers on paved terraces.

### Cultivation

Hydrangeas are easy to grow in well-drained soil, which should contain plenty of organic matter or humus. Bigleaf hydrangea prefers morning sun and afternoon shade. Avoid planting it in hot, dry, exposed sites. Most people buy hydrangeas when they are blooming, but spring or fall is the best time to set them out. For planting, dig a large hole approximately two feet across and one foot deep.

Bigleaf hydrangea responds to several light applications of fertilizer during the growing season. A general-purpose fertilizer, such as 10-10-10 applied at a rate of 2 cups per 100 square feet in March, May and July is suggested. It is not necessary to remove the mulch when fertilizing, but water soon after application to help dissolve the fertilizer and send it into the soil.



Bigleaf hydrangeas need ample moisture to prevent wilting.  
Karen Russ, ©2008 HGIC, Clemson Extension

Hydrangeas have such big leaves that they can suffer if set out during hot weather. They need plenty of water, so plan to water thoroughly once per week or more frequently.

Bigleaf hydrangea should be pruned after flowering so they can develop "old wood" to support blossoms the following summer. Avoid pruning after August 1.

One of the easiest ways to propagate bigleaf hydrangea is by layering. This is done by digging a trench near the plant and bending a section of limb down into the trench. Use a knife to remove a small ring of outer bark about an inch wide all the way around the limb. Then, cover the limb with soil, leaving 6 to 12 inches of the tip growth uncovered. Old established hydrangeas may also be divided in the early spring by using a shovel to divide the clump.

## Problems

The most common reason for hydrangeas failing to bloom is winter injury. Other reasons may be too much shade, poor fertility and too much nitrogen fertilizer.

Hydrangeas are susceptible leaf spots and powdery mildew. Insect pests on hydrangea include aphids, leaf tiers, rose chafers and red spiders.

## Cultivars & Varieties

The cultivars of *Hydrangea macrophylla* are divided into two groups:

- The "hortensias" have sterile flowers in solid masses, which are often so heavy they cause the stem to bend.
- The "lacecaps" have a center of fertile, relatively non-showy flowers and an outer ring of showy, sterile flowers, which together form a pinwheel effect.

### Hortensias:

- 'All Summer Beauty,' 3 to 4 feet tall with flower heads produced on current season's growth, unlike other bigleaf hydrangeas.
- 'Carmen', 4 feet tall with large pink flower heads.
- 'Nikko Blue,' 4 to 6 feet tall with rich blue flower heads (in acid soil).
- 'Blue Prince'
- 'Compacta,' supposedly more compact than 'Nikko Blue' with darker green leaves.

### Lacecaps:

- 'Blue Wave,' 6 to 7 feet tall with lacecap flowers.
- 'Coerulea,' perfect flowers a deep blue and ray flowers blue or white.

Several lacecaps feature silver-variegated foliage: 'Quadricolor,' 'Silver Variegated Mariesii,' and 'Variegata.'



Variegated foliage variety of bigleaf hydrangea.  
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**Climbing Hydrangea (*Hydrangea anomala*):** This is a deciduous vine, which climbs high by clinging aerial rootlets. Leaves are roundish, 2 to 4 inches long. The white flower clusters are 6 to 10 inches wide in lacecap effect. Old plants have a peeling, cinnamon-colored bark.

**Oakleaf Hydrangea (*Hydrangea quercifolia*):** This deciduous shrub grows to 6 feet tall and has deeply lobed, oak-like, 8-inch leaves, which turn bronze in fall. The white flowers turn pinkish as they age.

'Snow Queen' has large white flower clusters.  
'Snowflake' has a double-flowered appearance.  
'Harmony' is a low-growing shrub, 3 feet tall and 6 feet wide, with spectacular 12-inch cones of sterile flowers.



A double-flowered oakleaf hydrangea.  
Joey Williamson, ©2008 HGIC, Clemson Extension



Oakleaf hydrangea fall color  
Karen Russ, ©2008 HGIC, Clemson Extension

**Smooth or Snowhill Hydrangea (*Hydrangea arborescens*):** This is a 5-foot-tall deciduous shrub with oval, grayish green, 4- to 8- inch leaves.

Flowers are dull white and bloom late June through September.



Flowers of smooth hydrangea  
Joey Williamson, ©2008 HGIC, Clemson Extension

'Annabelle' produces enormous (to 1 foot) globular clusters of sterile white flowers on a plant about 4 feet tall.

'Grandiflora' has 6-inch clusters on a similarly sized plant.

**Peegee Hydrangea (*Hydrangea paniculata*):** This is a 10- to 15-foot shrub or up to 25-foot tree. Leaves are 5 inches long and turn bronze in fall. Flowers are mainly fertile, in 10- to 15-inch clusters, white slowly fading to pink in fall. Peegee hydrangeas are tolerant of city conditions and grow well in seaside gardens. 'Tardiva' flowers later, in August and September. 'Praecox' grows 10 to 15 feet tall and flowers in June.



Peegee hydrangea flowering in late summer.  
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*Hydrangea serrata* is a small (to 5 feet tall) deciduous shrub similar to *H. macrophylla* but smaller, with smaller leaves and smaller flowers. 'Blue Billow' is only 3 feet tall.



Lacecap type flowers of *Hydrangea serrata* 'Bluebird'  
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